## Claims

1. A device incorporating a first radio system operating at a first range of frequencies of operation and a second radio system operating at a second range of frequencies of operation, wherein at least a part of said first and second range of frequencies overlap, wherein the device further comprises a control means adapted to control the first and second radio systems such that such that only one or the other radio system may transmit at any one time.

2. The device of claim 1, wherein the first radio system is a Bluetooth system and the second radio system is an IEEE 802.11 system.

3. The device of claim 1, wherein the device is additionally controlled such that when one device is transmitting the other device cannot receive or transmit.

4. The device of claim 3 wherein the device is additionally controlled such that when one device is receiving the other device cannot receive or transmit.

5. The device of claim 2, wherein the control means comprises a switching means adapted to switch on and off the first and second radio systems.

6. The device of claim 2, wherein the control means comprises a multiplexing means adapted to time multiplex transmissions from the first and second radio systems.

7. The device of claim 2, wherein the control means comprises a multiplexing means adapted to time multiplex transmissions from the Bluetooth and IEEE 802.11 radio systems, the IEEE 802.11 and Bluetooth transmissions being multiplexed into Bluetooth time-slots.

8. The device of claim 7, wherein the Bluetooth transmissions are through a single HV2 SCO link connection, the IEEE 802.11 transmissions being in two time-slots in every four.

9. The device of claim 7, wherein the Bluetooth transmissions are through a single HV3 SCO link connection, the IEEE 802.11 transmissions being in four time-slots in every six.

10. The device of claim 7, wherein the Bluetooth transmissions are through two HV3 SCO link connections, the IEEE 802.11 transmissions being in two time-slots in every six.

11. The device of claim 2, wherein the control means prevents transmission of IEEE 802.11 packets during a Bluetooth ACL packet transmission.

12. The device of claim 2, wherein the control means prevents transmission of Bluetooth ACL packets during an IEEE 802.11 packet transmission.

13. The device of claim 12 in which the first and second radio systems share a common physical layer.

14. A method of incorporating a first radio system operating at a first range of frequencies of operation and a second radio system operating at a second range of frequencies of operation, wherein at least a part of said first and second range of frequencies overlap, into a single device, wherein the first and second radio systems are controlled such that only one or the other radio system transmits at any one time.

15. The method of claim 14, wherein the first radio system is a Bluetooth system and the second radio system is an IEEE 802.11 system.

16. The method of claim 15 further comprising controlling the radio systems such that when one radio system is transmitting the other cannot receive or transmit.

17. The method of claim 16 further comprising controlling the radio systems such that when one is receiving the other cannot receive or transmit.

18. The method of claim 15, wherein the radio systems are controlled by switching on and off the first and second radio systems.

19. The method of claim 15, comprising time multiplexing transmissions from the Bluetooth and IEEE 802.11 radio systems, the IEEE 802.11 and Bluetooth transmissions being multiplexed into Bluetooth time-slots.

20. The method of claim 19, wherein the Bluetooth transmissions are through a single HV2 SCO link connection, the IEEE 802.11 transmissions being in two time-slots in every four.

21. The method of claim 19, wherein the Bluetooth transmissions are through a single HV3 SCO link connection, the IEEE 802.11 transmissions being in four time-slots in every six.

22. The method of claim 19, wherein the Bluetooth transmissions are through two HV3 SCO link connections, the IEEE 802.11 transmissions being in two time-slots in every six.

23. The method of claim 15 further comprising preventing transmission of IEEE 802.11 packets during a Bluetooth ACL packet transmission.

24. The method of claim 15 further comprising preventing transmission of Bluetooth ACL packets during an IEEE 802.11 packet transmission.

25. The method of claim 24 in which the first and second radio systems share a common physical layer.